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A METHOD OF ADMINISTERING AND EVALUATING THE THEMATIC APPERCEPTION TEST IN GROUP SITUATIONS

School of Speech, University of Southern California

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I. THE PROBLEM

A. Introduction to the Problem

Today on every hand one encounters articles on personality. Educational, professional, and technical books and journals, as well as popular magazines and books, include material on this ever interesting subject. Thorpe says:

> Many people are more interested in personality improvement than they are in mental development. They know that their careers and their success depend upon the skill and sincerity with which they deal with people. When asked what knowledge they considered most important a group of college students headed the list with such statements as, "How to improve one's personality," "Understanding one's own personality problems," "How to deal with others effectively," and "How to reason out every day problems." . . . It is apparent that an understanding of personality and its improvement is the goal of a great many people. (58, p. 579).

An initial difficulty in the study of personality is the lack of any clear-cut, adequate conception of what is to be studied. Allport (1), Lewin (8), and Frank (30) may be cited as indicators of the confusion in this field, where, as they show, there are so many conflicting ideas and concepts, each used to justify a wide variety of methods, none of which are wholly adequate. The following study was undertaken to try to devise a method of diagnosing personality in group situations. In this study personality is viewed as a dynamic process of organizing individual experience. Personality is the general pattern of a person's total behavior.

B. Historical Background

From the earliest days of recorded history, men have attempted to fathom personal characteristics. One of the earliest efforts along this line was through the study of the stars and other natural phenomena. Even today some people try to find an explanation for their personality and actions in astrology.

Many workers have attempted standardization of personality diagnosis on other grounds. Gall attempted to prove that the shape and contour of the cranium indicated potentialities and characteristics. Lombroso was concerned with physiognomy; other investigators with handwriting; still others with numerical combinations; Kretchmer and Sheldon, and many endocrinologists, with body types.

Recently there has been a scientific effort to build and standardize personality tests. Guilford says: 'The zeal and effort shown at present in the

study of personality reminds one of a similar interest in the subject of general intelligence one-fourth of a century ago" (32, p. 636).

If we do not count James's literary chapter on the "self" the term "personality" appeared for the first time as a chapter heading in elementary textbooks of psychology in Watson's *Psychology from the Standpoint of a Behaviorist* in 1919. Today most books of this type devote two chapters or more to this topic. Courses on personality are springing up on every hand. Such courses range in objectives and content all the way from the type that smacks of the *How-to-Win-Friends-and-Influence-People* flavor to those of the more scientific variety (32).

Many so-called personality tests use the questionnaire technique, asking the subject to report on his customary actions and reactions by answering a series of questions. Others employ a rating scale which may be marked either by the person himself or by an observer. A more detailed analysis may be obtained by the administration of a battery of tests.

Another technique, receiving attention at present, is the less direct path through the projection method. This method is built on the hypothesis that conscious and unconscious motivated attitudes, habits, and needs may be projected if they are sufficiently condemnable to be refused recognition by their possessor. All the different projection techniques have the same general purpose: to have the subject reveal things about himself that he does not know, or that he dare not divulge. Suitable devices for the projective study of personality differences are: finger-painting, modeling in clay, play with toys, cloud pictures, ink blots, and interpretative responses to pictures. It is with this last type of projective technique that the present study is concerned. Symonds and Samuel (55) review the different projection methods and cite researches on each type.

One of the greatest criticisms of the earlier, or objective, method of personality analysis has been the possibility of distortion on the part of the subject, either unwittingly or otherwise. However, one big advantage this type of test has is a great degree of standardization of scoring and interpretation. The new technique, while so far lacking in these last mentioned advantages, offers few clues to the subject in the way of desirable answers and does not restrict his responses.

C. Importance of the Study

The study of personality has many practical advantages. Research is being carried on widely and each year many new tests appear which aim to give a more accurate picture of human behavior. "It is the hope of

science that this human element may be analyzed, understood, and measured . . . and finally predicted and controlled" (40, p. 76).

Crime and insanity are two great social problems confronting civilization and in the final analysis they are problems of personality. Graft, racketeering, divorce, suicide and many other problems depend for their final solution on an understanding of human nature (40).

One of the principal problems facing clinical psychology is the development of proper diagnostic and therapeutic techniques for personality maladjustment.

> The practical aim of all science is to predict and control the activities with which it deals. Astronomers can predict with extreme accuracy the appearance of eclipses, comets and meteors, the rise and fall of the tides and other more complicated actions of the heavenly bodies. Engineers can forecast accurately the strength of bridges, the safety of high buildings and hundreds of other practical events. In fact, the greatest achievements of modern science may be summed up in two words—prediction and control.
>
> In the realm of human relations science has been less successful in making accurate predictions. The laws that govern human behavior are much more intricate than those that govern the stars and planets. There is in the affairs of men that so-called "personal equation" which upsets all calculations. It is easy to predict and control the behavior of mechanical men, which scientists have recently built, because the laws governing their actions are understood. Whether or not science will ever be able to predict human behavior with precision and accuracy is still an open question. Much depends on the extent to which it can be measured. There can be no accurate predictions without measurement.
>
> Personality cannot be measured by any simple yardstick, foot rule, or thermometer. It has a great many different aspects and dimensions, each of which requires a different measuring instrument. Science has, therefore, not achieved a satisfactory measure of it. The greatest achievement of science to date is the invention of useful methods of measuring different aspects of personality (40, p. 76).

A major need exists for probing instruments which uncover content material of dynamic and etiological significance such as goals, values, traumata, complexes, and conflicts. These instruments should reveal the interrelationships and configurations in the structure of personality and not simply isolated traits and attitudes (35).

> The "atomistic" method, by which is meant relatively superficial quantitative study of such similar units as individual traits and attitudes,

> has been favored in this country at the expense of what has been called the "global" approach, wherein the personality is the unit and the treatment is qualitative with much dependence placed on individual skill, insight, and experience 35, p. 50).

The modern-minded medical practitioner feels the need of psychological standards by which he may compare the psychologic make-up of the patient with that of others he knows and with the findings of other observers.

> While the field of organic functions of the body has been increasingly well covered, medicine has been forced to recognize that the physical facts do not tell the whole story about the condition of the patient. It was by following a large group of arthritic patients for twenty years by means of all available physical diagnostic methods that Nissen in Boston, came to the conclusion that a psychologic factor is an important determinant in this organic disease. Dunbar arrayed an enormous clinical material which demonstrates how all organic diseases are influenced, often in a decisive way, by the psychologic condition of the patient (26, p. 514).

Dr. Booth (26) agrees with Kipling when he says:

> The Colonel's lady and Judy O'Grady
> Are sisters under the skin.

At least, he thinks that persons suffering from arthritis, hypertension, peptic ulcer, migraine, and tuberculosis are much alike under the skin, and that personality types found in such groups represent the most important field of objective testing in modern medical psychology.

By "objective testing of personality" is meant the same as in organic medicine, namely, that the patients reactions to a standard situation are observed and that the individual differences of reaction can be measured. It is important that the patient be as unaware as possible of the significance of his reactions and that the examiner be enabled to submit his results to others for control both of the facts and of the conclusions he has drawn from them.

> Growing insight into the personality factor in the causation of all sorts of organic and functional disease makes it of paramount importance for modern medicine to establish objective criteria in the examination and diagnosis of personality (26, p. 529).

The regular type of questionnaire does not meet the exigencies of the problem because it often measures only one aspect of the personality and can be easily distorted. This latter fact is shown in an experiment by Syz

(56) in which he gave a questionnaire to 64 medical students regarding their emotional reactions to certain words. They reported that they were effected emotionally by the words "father" and "mother" but not by "intercourse" and "lazy." During the test the psychogalvanic reaction of the subjects was recorded and indicated the opposite of what the subjects said.

It is apparent that further research and study along the line of understanding human behavior is desirable. Accurate diagnostic techniques for understanding personality will help in developing better methods for personal adjustment. This in turn will help solve many of our social probblems. Medical science is also in need of an objective diagnostic method of personality to help in understanding organic problems. Also the "global" approach and not the "atomistic" method is preferable.

D. Purpose of the Study

The purpose of this study has been to apply one of the individual projection measuring instruments of personality to group situations. The test used is the *Thematic Apperception Test*. The specific problems for solution have been:

1. Can the *Thematic Apperception Test,* which is a subjective individual technique, be converted into a group instrument using a scoring key?
2. What is the correlation of the dynamic content of the stories, from the *Thematic Apperception Test,* when no limits are placed on the subject's imagination and when limits, in the way of definite suggestions, are used?
3. Will the subject in group situations still project his drives, needs, frustrations, etc., in selecting suggested plots the same as investigators (10, 21, 22, 33, 34, 43, 44, 45, 55) say he does with the original test?

E. Scope of the Investigation

The investigation undertaken here does not include the validation of the projective method of analyzing personality. This method has been rather widely used by psychiatric and clinical workers (10, 22, 33, 34, 35, 37, 38, 39, 41, 45, 46, 47, 49, 55) and found to be of value.

The subjects for this study were 50 students, 12 women and 38 men. They were members in a beginning speech class at the University of Southern California. The age range was 16 to 23 years, the average being 19.9 years.

The group projection test was constructed from an analysis of 852 stories, from the *Thematic Apperception Test,* secured from subjects in several

different localities. These localities included Boston (stories from 11 subjects at the Harvard Psychological Clinic), Salt Lake City, San Diego, Los Angeles and suburbs. Stories from Richardson's study (70) and from the files of the Psychological Clinic of the University of Southern California are included in this number. The age range was 16 to 64 years. The average age could not be ascertained since the data from Harvard merely stated that the subjects were of college age. Practically all occupations were represented in this group. There were doctors of medicine, professors, teachers, dentists, students, several different kinds of laboratory technicians, stenographers, clerks, psychologists, housewives, administrators, and members of the armed forces.

The task of gathering the material and constructing the group projection test extended over a period of several months. Administering the *Thematic Apperception Test* and the group projection test and evaluating the results of both covered a period of two months.

The results of this study have been objectively scored from a key built at the same time the group test was constructed. The results from the two tests have been compared and the correlation determined.

F. Limitations of the Study

"The measurement of personality is bound up with the question of psychological measurement in general" (37, p. 605). The introduction and development of quantitative methods has affected the aspect of experimental psychology a good deal during the last quarter century. On the whole this influence has been good.

In the field of intelligence, where quantitative methods have been so much more extensively cultivated than in the study of personality, Binet carefully pointed out that his test does not, strictly speaking, measure intelligence, since it has neither a zero point nor equality of units. Even in this field, which has received a great deal more attention than the field of personality, the measuring units are not unambiguous. If this is true in the older fields of psychological experimentation it is even more true in the "measurement" of personality. Dr. Terman says:

> Surely it is a figure of speech to say that *A* is twice as introverted as *B*, three times as submissive as *C*. . . . Indeed, personality testing is in about the stage that intelligence testing was passing through in the nineties of the last century. We are not measuring personality, but exploring with improvised tests, too often haphazardly, to see how people respond (57, p. 606).

Besides lacking definite and unambiguous measuring units the lack of a precise nomenclature is another handicap in the study of personality. Indeed, for the term "personality" there are almost as many definitions as there are writers in the field (19). The term "diagnosis" also has a variety of meanings (16) and this same condition applies, with even more emphasis, to the dynamics of behavior.

The *Thematic Apperception Test* is a subjective device, and the results from it are considered to be a function of many factors, including the ability and background of the experimenter, his experience with the test, and particular analytic methods employed.

All of these limitations apply to the construction of the group projection test used in this study and to the analysis of the stories from the original *Thematic Apperception Test.*

Although an objective scoring key for the group test has been constructed to overcome the major handicap of interpreting the responses, it does not follow that the best or only interpretation for a particular plot was made. There are limitations pertaining to the sampling in the study. The comparatively small number of subjects, 50, constitutes another inherent weakness.

"Every improved method of investigation opens vistas into unknown regions, which, when explored, reveal openings into wider regions, and so without end" (12, p. 272). This is the function of science. Thus, the present study can only be considered as a beginning toward making the material in which attitudes and complexes are found more easily analyzed.

II. THE PROJECTION METHOD

Personality has not been extensively studied by means of projective methods. Although such methods do not necessarily constitute a royal road to the unconscious, they are designed to show the underlying structure of personality and may, in this sense, be compared to an X-ray picture.

Murray has stated: "If the psychologist of personality had to limit his discourse to the theories that were securely proved he would have nothing to recount. In his realm there are no certainties" (10, p. xii).

> It may be postulated that the underlying dynamics of personality spring from an interaction of forces. Each force impels the individual to seek a certain course of action. If it be inhibited or repressed, it may find release in the guise of phantasy, either known to the subject or repressed and unconscious. The phantastic expression of dynamic forces is hardly likely to assume chance forms, but will, it is believed, have certain meanings which are achieved through the projection of conflicts and emotions, wishes and desires, ideas and action. (69, p. 5).

Projection techniques are a relatively young tool in clinical practice. The principle underlying them is the same as the case history; that is, the assumption is made that from either one of them the personality of the subject, his characteristic adjustment or maladjustment may be inferred, and that based on it, a clinical diagnosis or prognosis may be made (45).

Projection serves as a tension reducing mechanism by attributing to others the things which would be intolerable to admit in oneself. It has been defined as:

> A defensive process under sway of the pleasure principle whereby the Ego thrusts forth on the external world unconscious wishes and ideas which, if allowed to penetrate into consciousness, would be painful to the Ego. Withdrawn from its metapsychological setting, the dynamic mental process thus described may be translated into these terms: a wish, attitude, or habit-hierarchy which is not compatible with other attitudes or habits of an individual may be ATTRIBUTED by that individual to other persons rather than to himself providing he lacks insight into the fact that he himself possesses the trait in question. This process of attributing is unconscious, i. e., the subject does not give any verbal evidence that he knows his perception is false (49, p. 151).

In the "projective techniques" it is assumed that the mental procedure which the individual adopts and the emotional reactions he displays in experimental situations operate similarly when he meets other life situations. Thus the reactions to a projection test give a sampling of the subject's charac-

teristic behavior. The examiner reconstructs the personality of the subject from his projected attitudes (36).

There has been a growing tendency in the past 20 years to supplement paper and pencil techniques with the use of a variety of materials and methods to reveal conscious and unconscious motivation, attitudes, and needs. All of these different techniques are classified under the term "projection methods." Symonds and Samuel (55) discuss the most important of these projection techniques under the following names: drawing, play, Rorschach ink blots, gesture and expression, handwriting, voice, drama, stories and pictures. Murray and his collaborators (10) show a wide variety of projective techniques in operation. They studied 50 men of college age for a two and one-half year period. Some of the procedures used were conference, autobiography, drama, construction, Rorschach ink blots, and the *Thematic Apperception Test*. "The writers offer a theory of personality and a functional survey of projective technics" (55, p. 81).

Murray felt that the *Thematic Apperception Test* was the most significant of the 16 techniques utilized in attempting to fathom personality structure. Speaking of this method he says:

> Of our technical procedures the series that were termed projection tests, which were designed to evoke imagery and fantasy, brought to light the most significant data. It was the data which most often revealed emotionally logical connections between past events and present behavior, and thereby enabled the experimenter to find a formulation which would give meaning to otherwise disparate facts. In all projection procedures the subject is asked to give shape to ambiguous material. The Thematic Apperception Test, for example, calls for stories suggested by a series of dramatic pictures. To do this the subject cannot avoid drawing on his past experiences, his fantasies, his anticipations of the future, or, at the least his memories of books and plays that especially appealed to him. Under the stress of the test what comes most readily to mind are his own feelings, emotions and attitudes when confronted by this or that situation, and so, though attending to the material, the subject talks mostly about himself. Indeed, the content of the stories, as well as their style and manner of composition, exposes so much to a discerning experimenter that the latter can hardly escape the feeling that he is prying. . . . Thus, unless the subject is inhibited by the experimenter's attitude he is certain to expose more than he would ordinarily confess, and what's more, more than he knows—because he is unconscious of it. (10, p. 728).

Symonds and Samuel in a paper in which they discuss projective methods make the following comment:

> The development of these miscellaneous devices for studying the dynamics of personality shows that deeper motivations, enduring attitudes, and basic needs reveal themselves in separable and observable aspects of conduct. Given an appropriate methodology, therefore, it would seem that the scope of the study of personality is co-extensive with human behavior. Projective techniques are an invitation to express in overt terms of movement, feeling, or phantasy the inner dynamics of personality. Sensitive as they are to what cannot be objectively measured and subject to the impact of the examiner's personality, they often lack reliability and established validity (55, p. 90).

Merrill, in a discussion of "Projective" vs. "Objective" methods, states that one of the major difficulties confronting the investigator of personality is the devising of techniques that permit full play for the expression of the differences in individuals and at the same time "yield results that can be expressed in quantitative terms by means of a system of scoring that is reasonably objective and can be readily learned by clerical assistants of moderate competence" (9, p. 87). The present study is a step in this direction.

When we examine carefully the procedures that may be called projective methods we find a wide variety of materials and techniques being employed for the same general purpose. The ultimate aim is "to obtain from the subject, 'what he cannot or will not say,' frequently because he does not know himself and is not aware what he is revealing about himself through his projections" (30, p. 404). While standardized tests tell how nearly the individual approximates to a norm, projective techniques aim to reveal the private world of meanings and feelings since they require the subject to organize the field, to interpret the material, and to react effectively to it.

III. THE THEMATIC APPERCEPTION TEST

A. The Test

Murray developed the *Thematic Apperception Test* as one of the 16 methods used for exploring the personality of 50 men of college age (10). Since the original series, two revisions have been made. The first test contained 20 pictures fairly obvious in their portrayal of action. After further research, the test was re-edited and a set of pictures more indefinite in content and bizarre in treatment was produced (70). The first revision consisted of 30 pictures. Ten were for both sexes, with another 10 only for males, and a like number only for females. The second revision was made during the winter of 1942 and is the one used in this study. It consists of twenty-eight black-and-white pictures. These are numbered from 1 to 20 with alternates in eight cases for men and women.

The manual of directions for the test states that it is a method of investigating personality by presenting pictures and encouraging the subject to construct fantasies around them. It is "based upon the well-recognized fact that when a person interprets an ambiguous social situation he is apt to expose his own personality as much as the phenomenon to which he is attending" (64, p. 1).

By directing the subject's attention to the task of interpreting the test material, that is, telling stories about the pictures, he becomes less conscious of himself and of the examiner's scrutiny, hence less vigilant in his defenses. It is assumed that the method penetrates somewhat below the peripheral personality, and thus the subject discloses latent strivings, images, and sentiments which he would be unwilling or unable to disclose in direct communication.

In administering the test the subject is seated in a comfortable chair, preferably with his back to the experimenter, and the following instructions are read to him:

> This is an opportunity for free imagination. I am going to show you some pictures, and around each picture I want you to make up a story. Tell what has led up to the situation shown in the picture, describe what is happening at the moment and what the characters are feeling and thinking and say what the outcome will be. Speak your thoughts aloud as they come to your mind. Use your imagination freely and make up anything you please (64, pp. 3, 4).

A rigorously standard procedure is unnecessary and the instructions may

be altered to suit the age and circumstances. The pictures are handed the subject one at a time and the experimenter writes verbatim everything the subject says.

It is possible to analyze the dynamic content of the stories in very great detail. However, for clinical purposes it is often sufficient to interpret the results in a less systematic and less analytical way. An analysis into the following 10 categories is suggested by the makers of the test.

(1) Determination of the principal character.
(2) Determination of the main thema in each story.
(3) Recurrent or dominant themas.
(4) Adequacy of principal characters.
(5) Conditions under which good and bad endings occur.
(6) Conditions under which specific needs are allowed gratification.
(7) Attitudes toward parents and sibling figures.
(8) Figures introduced by the story teller.
(9) Objects introduced by the story teller.
(10) Signs of inhibition (64, pp. 6-8).

A reproduction of picture No. 1 in the first series will be found in the appendix. The second series was not used in this study. A brief description of the pictures in both series follows:

First Series, Standard Set (10 pictures with four alternates for women).

1. A young boy contemplating a violin which rests on a table in front of him.

2. Country scene: in the foreground is a young woman with books in her hand; in the background a man is working in the fields and an older woman is looking on.

3-M. A short elderly woman stands with her back turned to a tall young man. The latter is looking downward with a perplexed expression.

3-F. An older woman is sitting on a sofa close beside a girl, speaking or reading to her. The girl, who holds a doll in her lap, is looking away.

4. The silhouette of a man's figure against a bright window. The rest of the picture is totally dark.

5. A young woman's head against a man's shoulder.

6-M. On the floor against a couch is the huddled figure of a boy with his head bowed on his right arm. Beside him on the floor is a revolver.

6-F. A young woman is standing with downcast head, her face covered with her hand. The other hand is placed against a wooden wall.

7. Two nude standing figures of a young man and young woman. The woman rests her head on the man's shoulder. Beside them stands a draped woman with a baby in her arms.

8-M A gray-haired man is looking at a young man who is sullenly staring into space.

8-F. On a sofa a young woman and an older woman are seated; an older man, a pipe in his mouth, leans over the back, talking to the young woman.

9-M. A man helplessly clutched from behind by three hands. The figures of his antagonists are invisible.

9-F. A young woman with a magazine and purse in her hand looks from behind a tree at another young woman in a party dress running along a beach.

10. A slender man looks straight out of the picture. The barrel of a rifle is visible at one side, and in the background are dim dream-like figures suggesting a surgical operation.

Second Series (at examiner's discretion) *(10 pictures with four alternates for women).*

11. A young man and a young woman; her hands are clutching his shoulders, and his head is turned away.

12-M. A young man lying on a couch with his eyes closed. Sitting beside the couch is an elderly man leaning forward with one hand raised above the forehead of the reclining figure.

12-F. A modernistic picture showing a girl with upraised arms surrounded by mechanical and electrical apparatus.

13. Blank card.

14-M. Head and shoulders of a man with upraised arm and mouth open as if shouting.

14-F. A young woman sits with her chin in her hand looking off into space.

15. A gaunt man with clenched hands standing among gravestones.

16-M. Four cowboys are lying as if half asleep in the grass.

16-F. Three girls in knickers are cooking something over an outdoor fire.

17. A road skirting a deep chasm between high cliffs. On the road in the distance are dim shapes. Protruding from the rocky wall on one side is the long head and neck of a dragon.

18. A man with bushy hair and horn-rimmed glasses is speaking with upraised fist.

19-M. Two young men with their backs to the camera loking out from under an arched doorway.

19-F. Two young women stand with their backs to the camera looking out through a large window.

20. An outline drawing of the head of an old bearded man with another old man apparently sitting cross-legged on his shoulders. In the background is the outline of a splintered tree. (64, pp. 2-3).

B. Previous Experimentation with the Thematic Apperception Test

The *Thematic Apperception Test* was first described by Morgan and Murray (41) in 1935. However, the basic idea of the test was used by Schwartz and presented at the 1931 meeting of the American Orthopsychiatric Association (46).

To date there has not been any extensive research carried on with the test. However, in the present study there are 22 references in the bibliography on this type of test. These references have titles under the following heads: (*a*) *phantasies and stories:* 20, 21, 28, 38, 39, 42, 48, 52; (*b*) *projection methods*: 30, 37, 45, 49, 50, 55, 69; (*c*) *The Thematic Apperception Test*: 22, 33, 34, 35, 41, 46, 47; (*d*) in the book *Exploration in Personality* (10) the test is discussed at great length and the results of the research with 50 men of college age given. This has been referred to previously and the fact pointed out that Murray considered the *Thematic Apperception Test* the most adequate of any of the techniques used in that investigation.

In 1937 Murray (42) published his second article on investigating phantasies. He gave a method of evoking phantasies and suggestions as to how the data obtained could be "conceptually" organized and interpreted. He felt that the investigation of phantasies should be included in every examination of personality that aimed to be thorough.

Messerman and Balkan (21, 38, 39) have made three different studies with phantasies. The resuts of all three investigations were similar. The summary and conclusions from one study follows:

> The Morgan-Murray phantasy test was given to 50 patients with various forms of psychoneuroses and early psychoses. The results indicate that:
>
> 1. The phantasies produced by each subject yield interpretations that are in accord with, and in some cases supplement, the clinical evaluation of the psycho-dynamisms of the subject's neurotic or psychotic reactions.
> 2. In certain respects the phantasies are of value in psychiatric diagnosis, in prognosis, and in estimating the progress of psychotherapy.
> 3. The phantasy test deserves further investigation and elaboration with regard to its possibilities, both as an instrument of psychologic research and as an aid in clinical psychiatry (38, p. 88).

In 1939 Symonds (52) attempted to determine criteria for selecting pictures to be used in investigating adolescents' phantasies. Eighty-one pic-

tures were used and pupils in English classes acted as subjects. He found that the pictures which produced "best" results and responses, judged by variety and plot and production of phantasy, had the following characteristics: lack of detail in the background which limit the setting of the story; vagueness in theme, and incompleteness of content; and characters with which the person telling the story might identify himself. Pictures dealing with family situations and social situations were the most provocative.

Rotter (47) conducted a study of the validity of the test with mentally disordered patients. He concluded that the method was economical in gathering deep understanding of the subject's personality and problems. He checked the interpretations from the test material against independently written case histories and clinical diagnoses and found a high degree of accuracy.

Harrison (33, 34) conducted two studies on the use and validity of the *Thematic Apperception Test*. In the first the experimenter endeavored to work out his inferences from the story alone, knowing nothing of the background of the 40 mental hospital patients who served as subjects. He concluded:

> This study demonstrates that biographical and personality information about mentally disordered patients can be deduced analytically from the *Thematic Apperception Test* with considerable validity when the test was administered by the experimenter under conditions similar to those that would obtain in ordinary clinical practice (33, p. 132).

Harrison's second experiment followed a similar procedure, except that persons other than the experimenter administered the test so as to eliminate cues that might arise from the physical appearance and behavior of the patient. He concluded that such cues did affect the interpretation of the results but not enough to lessen the clinical value of the test.

The *Thematic Apperception Test* is used by the Department of Psychology of the Menninger Clinic to obtain a sample of the thought content of their patients. According to Rapaport (46) the thought content reflects the subject's attitudes toward figures in his environment, his aspirations and his view of his work and recreations, as well as his attitude toward his illness. This information is significant in determining the prognosis and therapy for the case. The clinician interprets this sample of thought content for the formal characteristics of the stories and the content of the stories.

In considering the formal characteristics of the stories the examiner determines the degree to which the subject complies with the instructions given him. That is, did he merely give a description of the picture or did he give a story with a plot? How closely the subject adheres to the implications of the picture presented is also observed.

Another helpful basis for interpretation is referred to by Rapaport as *Inter-* and *Intra-*individual consistency. Deviations occuring in one story, such as omitting the events antecedent to the situation shown in the picture, when the subject has included such information in the previous stories, is labeled "intra-individual consistency." The examiner pays special attention to such stories and tries to find an explanation for such variation.

The evaluation of the degree of adherence to the picture context is determined by comparing the story of the subject with stories given, for the same picture, by other persons. This is labeled "inter-individual consistency."

A consideration of the formal characteristics of the stories gives only a general appraisal of the person and helps in locating stories of special significance. The thought content of the subject is inferred from the content of the stories. The strivings which the subject imparts to the figures in his story, the obstacles which he makes his figures encounter, surmount, or trip on, are considered "projections" of his own feelings and thoughts. These projections reflect the attitude of the subject and how he envisages his world and environment.

The *Thematic Apperception Test,* as a projection technique for diagnosing personality, at the present time is receiving attention from clinical and experimental psychologists.

IV. EXPERIMENTAL PROCEDURE

Richardson (70), after evaluating 1200 stories of the *Thematic Apperception Test,* obtained from a group of stutterers and a control group of normal speakers, remarked, in discussing the test with the present investigator, that stories pertaining to any particular picture tend to fall within a few well defined plots. From this observation evolved the idea of making a "group projection test" from the stories gathered on the *Thematic Apperception Test* administered in the regular clinical manner, and then testing the reliability of such an instrument.

Another investigator, working on the problem of selecting pictures for the exploration of personality, confirmed Richardson's observation in the following conclusion: "It was found that there were only a few main topics for themes and dominant tones, with a few classifications of dynamic mechanisms, for each picture" (69, p. 24).

A. Constructing the Group Projection Test

The first step in the present investigation was the collection of a large number of stories obtained from the administering of the *Thematic Apperception Test* in the regular clinical manner. A total of 1,382 stories were gathered on the entire test. However, after the groundwork for the project was completed it was deemed advisable to limit the study to the first series of pictures (standard test). In view of the fact that the authors of the *Thematic Apperception Test* say "The pictures of the second series may be used at the discretion of the examiner, who may omit them altogether" (64, p. 1), it was felt that the basic group of pictures would render sufficient reliable data for the study. On the first series of pictures, as mentioned in Chapter One, 852 stories were collected from several different localities and from different occupational groups with a wide age range.

Segregating the stories for each picture into basic plots was the next step. A further break-down was made by separating the different reactions within the several plots. With the material organized in this fashion the task of constructing the test was undertaken.

The group projection test for picture No. 1, which may be found in the appendix of this study, represents the survival of several different trials made on a developmental basis. In a like manner the scoring key for the test was developed.

1. *The First Attempt*

The first test constructed was divided into three parts, with several sentences under each part, and a space for an original idea in case none of the suggested sentences were representative of the subject's conception of the picture. The following directions were the instructions for their respective section:

1. Check the sentence that corresponds to your idea of what led up to the situation in the picture.
2. Check the sentence that corresponds to your idea of what is happening at the moment and what the characters are feeling and thinking.
3. Check the sentence that denotes what the outcome will be.

This test was abandoned because of the many difficulties encountered when an attempt was made to construct a key for its evaluation.

2. *The Second Attempt*

The second test followed along the lines of the first effort except that a key for evaluating the stories was made at the time the test was constructed. The stories were analyzed according to the following divisions:

A. Needs.
B. Environment's effect on the organism.
C. Organism's reaction to the environment.
D. Dominant tones.
E. General themes.
F. Adjustment or adequacy of the principal character.
G. Ending.

Each of these categories had several sub-divisions. This made the whole analysis very cumbersome. Furthermore, efforts to keep up with the evaluation sheet caused the sentences in the test to grow into paragraphs. This second test went through some simplification but was finally discarded because it was felt that it was too involved.

3. *The Final Attempt*

At this stage the following five main divisions were decided upon for analyzing the stories:

I. Needs.
II. Effect of the environment on the organism.
III. Reaction of the organism to the environment.

IV. Adequacy of the principal character as shown by the general themes and dominant tones of the stories.
V. Ending.

Each of these five main divisions warrants some discussion.

The categories for needs are five of the six listed by Travis and Baruch (18): *achievement, affection, belongingness, recognition,* and *sensory gratification.* The need for response which they listed has been included under the need for recognition in this study. Sex is included in the need for sensory gratification.

The second section, "effect of the environment on the organism" was divided into three parts: (*a*) frustrating, (*b*) helpful, and (*c*) neutral.

The third section, "reaction of the organism to the environment," was divided into two parts: (*a*) neurotic symptoms showing frustration and insufficiency, and (*b*) the portion portraying self-sufficiency and emotional stability.

The fourth section, "adequacy of the principal character as shown by the general themes and the dominant tones of the stories," was divided into *A* and *B* sections: the *A* portion indicating maladjustment and failure, and the *B* portion implying adequacy, adjustment, and success.

The fifth section, "ending," was also divided into *A* and *B* sections: the *A* part indicating that the ending was satisfactory neither to society nor to the individual, and the *B* part indicating that the ending was satisfactory to society and the individual.

Sections II, III, and IV were further divided. This last division gave the analysis more refinement.

A copy of the evaluation sheet will be found in appendix A. This sheet shows all the divisions and sub-divisions used in analyzing the stories in this study.

Attention is drawn to the fact that all of the *A* parts on this sheet are negative or unfavorable, and that all of the *B* parts are positive or favorable. When an analysis of the test is recorded on the tabulation sheet a quick survey will indicate the trend of the personality being diagnosed.

In constructing the test itself the three divisions or sections employed in the first and second attempts were discarded. In their place significance ideas or topic sentences were used with different plots under each. For instance, picture, No. 5, in which a young woman's head is placed against a man's shoulder, resolved itself into three main situations. They were: a reunion, a parting, consolation. In picture No. 8 M, in which a gray-

haired man is looking at a young man who is sullenly staring into space, the stories were reduced to three main circumstances. They were: in a doctor's office, in a court room, a father talking to his son. This became the pattern for the final form of the test.

The scoring key was constructed at the time the test was built. The test and key for Picture 1 will be found in the appendix.

B. Administering The Tests

The tests for this experiment were all conducted in a projection room, in the Cinema Department of the University of Southern California. The room was equipped with a screen, a rheostat on the lights, a 35 millimeter slide projector, and chairs with an arm which provided a writing space.

The subjects, college students in a beginning public speaking class, faced the screen squarely. Twenty-five students took the tests each time they were administered.

1. *Materials Used*

Because the technicians of the Harvard Psychological Clinic, the distributors of the *Thematic Apperception Test,* are serving in the armed forces, transparencies for the experiment and pictures for this study were not available from that source. Hence, the transparencies and pictures had to be reproduced by an amateur from a copy of the test. Although they were probably not as accurate as professional copies, under the conditions they served very well and the results of the experiment were probably not altered by their use.

The screen used was four by five feet and the images, while not completely covering the screen, were large enough to be plainly visible in both the front and back rows of the auditorium. The transparencies were projected from a standard 35 millimeter slide projector.

2. *Lighting and Timing*

The room used for this experiment was chosen because the light could be readily controlled. It was felt that the subject's eyes would accommodate more readily if the light was regulated by a rheostat, also that the picture would be visible throughout the time it was being considered.

For each picture the room was completely darkened for the first half

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minute. The rheostat was then raised half-way and kept at this point until it was lowered for the next picture. This eliminated the complete change for each slide from a completely darkened room to a very light one and, as mentioned before, this procedure also made the picture visible throughout its exposure. As the result of experimentation it was decided that three and one-half minutes per picture was sufficient time. This permitted the 14 pictures, used in the test, to be administered in one class period.

3. *Grouping the Subjects*

The students were divided into two groups. Henceforth they shall be spoken of as Group 1 and Group 2. Group 1 took the test in an altered clinical manner first. Two weeks later this group took the group projection test. Group 2 took the group projection test first, and two weeks later took the test in the altered clinical manner.

4. *The Clinical Test*

When the subjects came in the room they found at each place a blue book and an instruction sheet. They were told that they were about to participate in a scientific experiment. The instruction sheet was then read aloud and any questions pertaining to it answered. Following is a copy of this sheet.

INSTRUCTIONS

This is an opportunity for free imagination.

Some pictures will be projected on the screen and you are to make up a story concerning each picture. Write your ideas about the pictures on the paper provided at your place.

The picture will shown for 1/2 minute, the lights will then be raised to provide enough light so that you can write. The picture will remain on the screen another 3 minutes. At the end of 3 and 1/2 minutes another picture will be shown and the same procedure followed. Number your stories to correspond with the numbers on the picture.

INCLUDE THE FOLLOWING PARTS IN EACH STORY

1. What has led up to the situation shown in the picture.
2. Describe what is happening at the moment and what the characters are feeling and thinking.
3. State what the outcome will be.

There is no right nor wrong story, use your imagination freely and make up anything you please.

At the end of the experiment leave all material at your seat.

Fill in the following data now:

Name..... Age.... Date..... Sex.....

Occupation..... or school..... Grade....

5. *Scoring the Clinical Test*

This test was corrected according to the evaluation sheet in Appendix A. As previously stated this analysis was used in constructing the key for correcting the group projection test.

Statistical procedures for evaluating the *Thematic Apperception Test* have not been universally determined. An investigator who desires to use some type of measurement is left to his own devices. The Harvard Psychological Clinic has a data sheet which is used for evaluating the stories from the standpoint of the "needs" of the individual and the "press" of his environment. In the present investigation the stories were evaluated for needs, effect of the environment on the organism, reaction of the organism to the environment, adequacy of the central character, and endings. In the interpretation of a given story, if there was an indication of a need for achievement as well as a need for recognition, both needs were scored. In all the categories, except that of "needs," a value of one was recorded in each section in the analysis. In scoring the section "effect of the environment on the organism," the values under *C* were added to the *B* values. These were very few, perhaps 10 in all of the stories.

The tabulation sheet found in appendix *B* was used to record the results of this test, as well as the group projection test. This put the results in a form amenable to statistical treatment.

Five subjects did not write a story on picture No. 7, the nude scene. The following comments were made in place of a story, "Sorry, no imagination," "I don't understand the connection of the principals," "No scene such as this could be, I mean it is a good painting, but —," and "To me it is just a picture." The authors of the test (64) consider signs of embarrassment, blockage, and confusion very significant and "complex-indicators," so the above responses were scored on the *A* or unfavorable side of the tabulation sheet and arbitrarily given the following values:

I. *Needs:* achievement, belongingness, and sensory gratification.
II. *Effect of the environment on the organism:* frustrating and undesirable.
III. *Reaction of the organism to the environment:* neurotic symptoms of withdrawing and escape.
IV. *Adequacy of the principal character:* not adequate, anxiety and insecurity.
V. *Ending:* not satisfactory.

On the tabulation sheet these values are scored as follows:

I, A, C, E—II, A, 4—III, A, 3—IV, A, 3—V, A

A glance at the tabulation sheet in the appendix will make clear the procedure used in scoring the stories.

It was deemed advisable for purposes of simplification and elimination of distraction, to have each subject write on every picture, 14 in all. Ten of this number were to be used only for men and a like number to be used only for women. In correcting the test, all pictures numbered 3-*F*, 6-*F*, 8-*F*, and 9-*F* were discarded from the mens' papers. On the womens' papers 3-*M*, 6-*M*, 8-*M*, and 9-*M* were discarded. This left a total of 10 pictures for each person.

6. *Administering the Clinical Test*

Perhaps a word is in order explaining the reasons for the alteration of the clinical method of administering the test. There seemed to be three such reasons.

1. Harrower-Erickson (36) concluded, after modifying the Rorschach method for use as a group test, that the form offered as valid a tool for estimating certain aspects of personality as the usual individual procedure. He said it should not supplant the original technique, but the group method had great advantages where a large number of subjects were to be examined because it was enormously time-saving. The results of his research seemed to justify trying the group method with the *Thematic Apperception Test.*

2. Murray, in a summary of his experiment, said: "Our findings indicated that the sex of the experimenter was a factor that modified the subject's responses. This supposition was confirmed later by results obtained under more controlled conditions" (10, p. 740). It was felt that group administration would overcome this handicap.

3. Many more factors in the study were kept constant by administering both tests in the same manner.

7. *The Group Projection Test*

When the subjects came in the room they found a booklet at each seat. The first page was an instruction sheet and the remainder of the material constituted the group projection test. This test was conducted in the identical manner as the clinical test. A copy of the instructions follows.

INSTRUCTIONS

At your place you will find different stories concerning pictures that will be projected on the screen.

The pictures will be shown for 1/2 minute, the lights will then be

raised sufficiently for you to read. The pictures will remain on the screen another 3 minutes. Read all of the stories concerning the picture on the screen and then check the story which represents, or most nearly represents, your idea of the picture. Pictures 7, 8-*M*, 8-*F*, and 10 have two pages of stories. At the end of 3 and 1/2 minutes another picture will be shown and the same procedure followed.

Check the main section and also the sub-section. For example:

>1. The man is lonely and blue.
  (*a*) He will call some friends and go to a dance.
>(*b*) He will go to the library and read.
  (*c*) He will go for a ride in his car.

BE SURE THE NUMBER OF THE STORY YOU CHECK CORRESPONDS WITH THE NUMBER ON THE PICTURE ON THE SCREEN.

There is no right nor wrong story, just check the one you think best represents the picture.

At the end of the experiment leave all material at your seat.

Fill in the following data now:

Name..... Age.... Date..... Sex.....
Occupation..... or school..... Grade....

8. *Scoring the Group Projection Test*

This test was corrected according to the key constructed for that purpose and the results were recorded on tabulation sheets. The key for correcting the sample picture (No. 1) may be found in the appendix immediately after the objective test for that picture. To interpret the keys for the test refer to Appendix A.

The procedure for eliminating the four alternate pictures, in this test, was the same as that followed in the clinical method.

C. Method of Treating the Data

1. *Measures Used with the Data*

Pearson's product-moment coefficient of correlation was used to determine the degree of relationship between the results of the clinical test and the group projection test. The coefficients of correlation and the probable errors were computed separately for Group 1 and Group 2. The coefficients of correlation, the means, the standard deviations, and the standard deviations of the means were computed for the clinical and the group projection test. The standard deviations of the differences and the critical ratios were also calculated.

In computing the correlations the usual raw score formula for zero-order correlation was used. The correlations obtained by this method and the probable errors of the coefficients of correlation are listed in Table 2. These correlations were computed and checked by means of a calculating machine.

The means, standard deviations, standard error of the means, and the critical ratios were calculated by the regular formulas. However, in calculating the standard errors of the differences a formula was used in which the correlation between the two sets of scores was taken into account. The results of these computations are listed in Table 1.

2. *Checking the Analysis*

One representative story from each of the clinical tests was evaluated by another worker as a check on the reliability of the investigator's analysis. To compute the agreement of these two sets of judgments tetrachoric correlation was used for the last four categories of the analysis. These tetrachoric correlations were computed by means of the computing diagrams for the tetrachoric correlation coefficient (67). The first category, needs, was analyzed by ordinary zero-order correlation using the raw score formula. The data from these computations will be found in Table 3.

V. RESULTS OF THE INVESTIGATION

The results of this study have been considered from a quantitative point of view. As previously mentioned, the results from the analysis of the clinical and the group projection test were recorded on tabulation sheets provided for that purpose. These data were then treated statistically. In all of the categories, except that of needs (No. 1), a value of one was recorded for every picture, in each section of the analysis. These sections were divided into *A* (unfavorable) and *B* (favorable) parts. In the statistical analysis only the favorable or *B* classifications of the last four categories were considered. The favorable sections were arbitrarily chosen for the computations. Since there were 10 points in each of these categories, one for each story, an analysis of the unfavorable or *A* sections would render the same results.

In each case the means for the group projection test were higher than the means for the clinical test. In four of the five categories the standard deviations were larger for the group projection test than for the clinical test. The critical ratios were significant in two cases. In one instance the critical ratio was very small. In the two remaining cases the critical ratios were statistically speaking, insignificant but there was a definite tendency toward discrimination between the two tests. A consideration of these facts will be found in the discussion of the tables. The significant data are presented in Tables 1 and 2.

A. Discussion of Table 1

In Table 1 is found a comparison between the clinical test and the group projection test according to the means, standard deviations, standard deviations of the means, standard deviations of the differences, critical ratios, and the chances that the true differences are greater than zero. A brief discussion of each category of this table follows.

I. *Needs*

The first column in Table 1 presents a comparison of the clinical test and the group projection test for needs expressed. The needs used in analyzing these data were: achievement, affection, belongingness, recognition, and sensory gratification. The means of this first section are noticeably larger than the other categories. This is due to the fact that, as previously mentioned, in the interpretation of a given story, if there was an indication of a need for achievement as well as for recognition, both needs

TABLE 1

COMPARISON OF THE CLINICAL TEST AND THE GROUP PROJECTION TEST ON THE FIVE CATEGORIES FOR MEANS, STANDARD DEVIATIONS, STANDARD DEVIATIONS OF THE MEANS, STANDARD DEVIATIONS OF THE DIFFERENCES, CRITICAL RATIOS, AND CHANCES FOR A TRUE DIFFERENCE

	I[a]	II-B[b]	III-B[c]	IV-B[d]	V-B[e]
MEAN, group*	21.68	2.96	4.42	4.94	6.12
MEAN, clinical*	20.28	2.62	3.74	4.84	5.64
Difference	1.40	.34	.68	.10	.48
SD, group	2.51	1.33	1.52	1.50	1.77
SD, clinical	1.51	.98	1.56	1.46	1.73
SD_m, group	.36	.19	.22	.22	.25
SD_m, clinical	.22	.14	.22	.21	.25
SD_{diff}	.37	.16	.22	.18	.20
CRITICAL RATIO	3.8	2.12	3.09	.56	2.40
Chances in 100	99+	98+	99+	71	99+

*50 subjects.
[a]I Needs (achievement, affection, belongingness, recognition, sensory gratification).
[b]II-B Effect of the environment on the organism (helpful).
[c]III-B Reaction of the organism to the environment (emotionally stable).
[d]IV-B Adequacy of the principal character (adjusted and successful).
[e]V-B Ending (satisfactory).

were scored. In all other categories, except needs, a value of one was recorded in each section of the analysis.

A definite tendency was indicated for the number of needs for the group test to be greater than the needs for the clinical test. One possible explanation of this follows.

Care was taken in constructing the group projection test to word it in such a way that a good many definite needs were disclosed. The subject in writing *his* interpretation of the pictures frequently did not select words that expressed needs, or at least did not express as many needs, as the words chosen for the group instrument. As a result the analysis shows a larger number of needs for the group projection test. An example follows to illustrate this point.

The following story, from the group projection test, was selected by Subject 6 of Group 2:

Picture 2

1. The girl is unhappy and discontent with farm life. She is leaving the farm to make a home for herself in the city.

(*b*) The girl gave up her farmer boy sweetheart when she went to the city to live. She never married but devoted her life working for

an ideal. She worked hard, attained great recognition, but was very lonely.

The same subject wrote the following for this picture when the clinical test was administered:

(1) The girl has been away to school and is now preparing to go back to school.
(2) She is looking forward to her return to school and looking into her future life in which she hopes to be a rural school teacher.
(3) She will accomplish her end and will teach school, but will miss her life on the farm and her rural farm life.

The analysis for this story in the group projection test reveals a need for achievement, affection, belongingness, and recognition. These are four of the five needs employed in this study. The analysis of the clinical story reveals a need for achievement and recognition, or two of the five needs listed.

The particular group story cited above presents more needs than the average group story. However, it was selected as an illustration because it elucidates this one possible explanation for the tendency for larger scores for needs in the group projection test than in the clinical test.

The higher standard deviation for the group projection test, relative to needs, discloses a trend for more variability, or wider spread, for that test than is demonstrated in the clinical test. The critical ratio of 3.8 is statistically significant and indicates that the two tests are quite different so far as needs are concerned.

II-*B*. *Effect of the Environment on the Organism*

Column two of Table 1 gives a comparison of the two tests for the second category employed in analyzing the stories. This section represents the subject's feelings concerning the environment. That is, whether he feels that the environment is frustrating (thwarting, dominating, friendless, undesirable), or helpful (recognizes and accepts him, is submissive, loving, pleasant, and desirable). Similar to Sections III, IV, and V, only the favorable or *B* portions were treated statistically.

As in all the other categories the mean of the group projection test exceeds the mean of the clinical test. The difference of .34 in favor of the group test appears to be rather negligible. In this section, as well as in the first section, there is a definite trend for greater scatter of scoring for the group projection test than for the clinical test. It is to be noted that the

variability of scoring for the three remaining sections is much more evenly distributed relative to the scoring of the two tests. The standard deviation of the difference in this category however, is only .16. Thus the critical ratio of 2.12 for this section fails to indicate a statistically significant difference between the two tests, but the fact that there are over 98 chances out of 100 of the difference being greater than zero tends to imply a tendency toward discrimination. There is a trend for the two tests to be different but this trend cannot be regarded as significant statistically.

III-*B*. *Reaction of the Organism to the Environment*

Column 3 of Table 1 gives a comparison of the two tests for the third category used in analyzing the stories. This section is concerned with the subject's reaction to his environment. The two divisions in this group are neurotic symptoms revealing frustration and insufficiency, and responses disclosing emotional stability and self-sufficiency. Under the first classificathe aggressive, hostile, submissive, self-punishing, withdrawing, ambivalent, and anxious reactions are scored. Under the second classification or *B* portion the compensations, sublimations, and attainments were scored.

In this instance as in section 1, there is a definite discrimination between the two tests, the critical ratio being 3.09. However, this discrimination is not as marked as in the first category. Again the mean of the group projection test exceeds the mean of the clinical test. There is very little difference between the variability of scoring on the two tests.

IV-B. *Adequacy of the Principal Character*

Column four of Table 1 presents a comparison, of the clinical test and the group test, for the fourth category utilized in analyzing the data. This section is concerned with the adequacy, adjustment, and success of the principal character as revealed by the general themes and dominant tones of the stories. The two divisions in this section are maladjustment, failure, and conflict, disclosing inadequacy; and adjustment, success, and harmony demonstrating adequacy. Under the first classification, the *A* portion of the category, discouragement, despair, hate, revenge, crime, insecurity, failure, deprivation, sacrifice, and self-punishment were scored. Under the second classification or *B* portion, hope, courage confidence, love, trust, attainment, success, happiness, and emotional and physical satisfaction were scored.

In this section the spread or variability of scoring as shown by the

standard deviations is similar to those of Categories III-*B* and V-*B*. The critical ratio of .56 is very small, resulting in the finding that there are 29 chances in 100 that the true difference is not greater than zero. On the basis of this fact, it appears that there is no appreciable difference between the two tests in Category IV-*B*. This would imply, as far as ascertaining the adequacy of the leading character, that the group projection test is very smiliar in nature to the clinical test.

V-*B*. *Ending*

The last column of Table 1 is concerned with satisfactory endings as shown in the two tests. The *A* portion of this category is concerned with endings that are not satisfactory to society nor to the individual. The *B* portion pertains to the endings that are satisfactory to society and the individual.

Again, a similarity in scatter is noted for the two tests. The critical ratio of 2.40 is found in Table 1 for Section *V-B*. As a result, this section becomes the most significant in trend of the three categories in which statistically insignificant results were found.

The data of Table 1 indicate the following order of parallelism between the group projection test and the clinical test. First, IV-*B* (critical ratio of .56) denoting a high degree of relationship between the two tests. Second, II-*B* (critical ratio of 2.12) indicating a trend toward discrimination between the two tests. Third, V-*B* (critical ratio of 2.40) expressing a more advanced degree of discrimination betwen the tests. The two remaining categories signify a significant lack of parallelism between the two tests.

B. Discussion of Table 2.

The coefficients of correlation for groups 1 and 2 and the combined groups, and the probable errors of the coefficients of correlation are presented in Table 2. There are several possible explanations for the data, a few interpretations follow.

The clinical test was administered to Group 1 first and the group projection test was administered two weeks later. Group 2 had the tests in the reverse order. The consistently higher correlations for Group 1 might be explained as follows. When the group test was administered there might have been a tendency to search for a plot or at least to pick out a plot similar to the one originated. That is, there was probably more chance for a halo effect or a memory bias with Group 1 than Group 2.

TABLE 2

COEFFICIENTS OF CORRELATION AND PROBABLE ERRORS OF THE COEFFICIENTS OF CORRELATION BETWEEN THE SCORES ON THE CLINICAL BASIS AND THE SCORES ON THE GROUP BASIS

Category	GROUP I[a] N 25		GROUP II[b] N 25		TOTAL N 50	
	r	*PE*	*r*	*PE*	*r*	*PE*
I	+.44	±.109	+.08	±.134	+.24	±.090
II-B	+.72	±.065	+.34	±.119	+.57	±.064
III-B	+.67	±.074	+.29	±.124	+.48	±.073
IV-B	+.81	±.046	+.47	±.105	+.64	±.056
V-B	+.81	±.046	+.54	±.096	+.67	±.053

[a]Group I had the clinical approach first.
[b]Group II had the group approach first.

Stated differently the explanation might be, that the subjects did not remember the stories checked in the group test as clearly as they remembered their original stories. This made for less carry-over and hence a lower correlation was found for Group 2. This hypothesis is not accepted by another clinician consulted about the problem.

Another interpretation of the coefficients of correlation for Group 1 might pursue the following line of reasoning. If a subject actually reveals his personality and dynamisms, as purported by Murray (10), through the *Thematic Apperception Test* and then, from a number of suggestions, selects stories from the group projection test that follow in line with his creation, then the second named instrument reveals his dynamisms also. The high correlations found in Table 2 for Group 1, would indicate on the whole, by this line of reasoning, that the group projection test is a fairly adequate substitute for the *Thematic Apperception Test.*

An interpretation for the low correlations for Group 2 in Sections I, II-*B,* and III-*B,* might be stated as follows. Suggestions will not take root unless there is a subsoil for the suggestion (18). The old argument that suggestions have a carry-over effect and, therefore, cannot be used in subjective techniques is not upheld from the data presented for Group 2 in Table 2.

In considering the differences in the coefficients of correlation, for Group 1 and Group 2, attention should be given the following facts. The groups were not balanced as to age, sex, and intelligence. The subjects whose names began with letters *A* to *M* inclusive, were assigned to Group 1. The remainder of the class were delegated to Group 2. In such a small

sampling as the present study (25 subjects in each group) discrepancies may be due to inequalities of the groups.

In considering the coefficients of correlation for the total group the following points should be noted.

In every category but No. 1, needs, a substantial degree of relationship is manifest. The coefficients of correlation for needs is fairly low. The explanation given this section in discussing Table 1 is probably applicable here also.

Another answer for the low correlations of the first category might be the investigator's interpretation of this section. That is, the analysis sheet constructed for analyzing the stories, presents a finer measuring instrument for the other categories listed, than it does for needs. Since there is usually more than one need operating at a time it is almost impossible to make this section as refined or sensitive as the other sections.

The next lowest correlation for the total group, found in Table 2, is the division III-*B*. The correlation in this section of .48 would tend to indicate a higher degree of relationship between the two tests than is evidenced in Category 1 (needs). A correlation of .57 was obtained for section II-*B*. This correlation would imply a relatively higher degree of relationship between the clinical test and the group projection test in respect to the effect of the environment on the organism. The correlation of .64 for Section IV-*B*, indicates a material parallelism between the two tests. The highest correlation for the total group, .67, was obtained for Section V-*B*. On the basis of zero-order correlation, it is evident that the clinical test and the group projection test have the highest degree of parallelism in the fifth category (ending).

The reliability of a coefficient of correlation must be considered. Like any statistical constant it is not a fixed, unchangeable quantity. It is subject to the customary errors of measurement that appear in the original data from which it is computed. Repeated experiments would give a varying coefficient of correlation. It is desirable to know within what range any obtained coefficient will fluctuate if repeatedly calculated from comparable sets of data. As in finding the reliability of any statistical constant, it is the customary assumption that coefficients of correlation fluctuate above and below the obtained one according to the law of normal distribution. The reliability is then indicated by the probable error of that distribution. The probable errors for the coefficients of correlation will be found in Table 2.

Because there is no known way of computing the reliability of this scale it is impossible to correct these correlations for attenuation. Leaving errors of sampling out of consideration the expectation is the true relationships would be higher than the obtained ones.

The conclusion is probably valid that the two methods produce quite similar responses. However, the results from the group approach are not identical with the results obtained from the clinical method. The group projection test, in its present stage, might be used as a screening technique to locate subjects that need a more thorough and probably individual diagnosis.

C. Discussion of Table 3.

In Table 3 is presented the agreement between two sets of judgments on

TABLE 3

Coefficients of Correlation of Agreement Between Two Sets of Judgments on the Thematic Apperception Test Stories*

I	Pearson *r*	.30
II-B	Tetrachoric *r*	.96
III-B	Tetrachoric *r*	.90
IV-B	Tetrachoric	.92
V-B	Tetrachoric *r*	.95

*50 stories

I Needs (achievement, affection, belongingness, recognition, sensory gratification).

II-B Effect of the environment on the organism (helpful).

III-B Reaction of the organism to the environment (emotionally stable).

IV-B Adequacy of the principal character (adjusted and successful).

V-B Ending (satisfactory).

one story from each of the 50 clinical tests. With the exception of Category 1, for which the product-moment coefficient of correlation was computed, data in Table 3 indicate a high degree of agreement between the judgments of two clinicians responsible for interpreting the *Thematic Apperception Test* stories. All the tetrachoric correlations were .90 or above.

The following example will probably explain the low correlation between the judgments in Category 1.

Subject 25 from Group 2 wrote the following story for Picture 3-*M*.

> The boy has asked her permission to get married and she has said that she would give her permission but she wished that he would not. He is wondering what to do, he wishes to get married and yet he does not want to hurt his mother. She is thinking whether or not she has said the right thing and knows that she will lose him. She is afraid.

The co-worker analyzed this story as showing a need for affection. The investigator analyzed it as indicating a need for affection and sensory gratification (sex).

It was noted the investigator felt there was a need for recognition most of the time when a need for achievement was indicated, hence two needs were checked on the tabulation sheet. The co-worker usually felt there was only one need manifest in such situations.

Most clinicians using the *Thematic Apperception Test* feel the problem of reliability will have to wait until some degree of standardization has been introduced into the method. Harrison says: "At present there would probably be a low correlation between the deductions of two different examiners, but it should be pointed out that both might be valid, each sampling different facets or aspects of a personality" (35, p. 57).

In view of the above statement, it appears that the reliabilities of judgment of the investigator, when checked against a second clinician, yielded as high or higher correlations than are commonly found.

VI. SUMMARY AND CONCLUSIONS

A. Summary

The purpose of this study has been to devise a method of evaluating personality in group situations. It has attempted to make a group projection test, with an objective key for evaluation purposes, from the *Thematic Apperception Test* and then ascertain the reliability of such an instrument.

Fifty college students from a beginning public speaking class acted as subjects for the investigation.

The group projection test was constructed from an analysis of 852 stories, from the *Thematic Apperception Test,* secured from subjects in widely scattered localities.

The *Thematic Apperception Test* and the group projection test were administered in identical manner. The clinical test was scored from the same analysis sheet that was used in constructing the key for correcting the group projection test. The results from both tests were recorded on tabulation sheets and treated statistically. The tabulation sheet is built in such a manner as to render a "wholistic" approach. That is, with a certain number of needs, there is a tendency for the personality to react in certain patterns. When recorded on the tabulation sheet a glance indicates whether the reactions are favorable or unfavorable.

B. Conclusions

Several possible interpretations may be given for the findings. However, with the clinical test as the criterion the results indicate that:

1. There is a substantial relationship between the *Thematic Apperception Test* and the group projection test in four of the five categories used in analyzing the stories.
2. There is a much higher relationship between the two tests when the clinical test is administered first.
3. The group projection method is not identical with the clinical method, but there is enough relationship that with further research and refinement it could probably be utilized in situations where it will have definite advantages over the individual method. That is, where large numbers of persons are to be tested, only by some such adaptation can the demand be met.
4. The group projection test does not indicate the needs as accurately as it does the other categories.

5. The group projection test most nearly approaches the *Thematic Apperception Test* in diagnosing the ending and the adequacy of the leading character. In these categories it appears to be an effectual substitute for the clinical test.

6. The group projection test could be very effectively employed as a screening device to locate subjects needing a more thorough and probably indivdual diagnosis.

7. The group projection method deserves further investigation and elaboration with regard to its possibilities.

C. Recommendations

Numerous possible studies in this field have been suggested as a result of the present investigation. Research along the following lines is indicated:

1. The group projection test should be shortened by administering it to a larger sampling and the stories not checked or rarely checked discarded.

2. Research might be carried on to ascertain if the test could be distorted by a subject trying to make a definitely good or poor impression.

3. A place should be provided in the test for an original story and the subject allowed to check a suggested plot or write his own plot. This would reveal how often and how accurately the group projection test adequately expressed the subject's reactions to the picture.

4. The analysis sheet used in ascertaining the dynamic content of the stories should be refined. That is, the sub-headings under the *A* and *B* portions of the different categories should be placed on a continuum so there would be an equal progression in each sub-section from No. 1 through No. 4.

Much research along the line of this study remains to be done, and this preliminary investigation seems to give evidence that those problems in the field which await solution are of real significance.

APPENDICES

Appendix A: Analysis of Dynamic Content of the Stories of The Thematic Apperception Test

I. NEEDS
- *A.* Achievement.
- *B.* Affection.
- *C.* Belongingness.
- *D.* Recognition.
- *E.* Sensory gratification (including sex).

II. EFFECT OF THE ENVIRONMENT ON THE ORGANISM
- *A.* Frustrating:
  1. Thwarts, punishes and is harmful.
  2. Dominates.
  3. Friendless.
  4. Undesirable and he rejects it.
- *B.* Helpful:
  1. Recognizes and accepts.
  2. Submissive.
  3. Loving.
  4. Pleasant and desirable.
- *C.* Neutral:
  1. Mysterious and he is curious.
  2. Monotonous.

III. REACTION OF THE ORGANISM TO THE ENVIRONMENT
- *A.* Neurotic symptoms showing frustration and insufficiency:
  1. Aggressive, hostile, resentful, disgusted.
  2. Submissive, dependent, conforms, punishes self.
  3. Withdraws, escapes, insanity.
  4. Ambivalent, anxious, fearful, despondent, sorry.
- *B.* Reactions of self-sufficiency and emotional stability:
  1. No conflict.
  2. Compensates and sublimates (socially acceptable).
  3. Attains.

IV. ADEQUACY OF THE PRINCIPAL CHARACTER AS SHOWN BY THE GENERAL THEMES AND DOMINANT TONES OF THE STORIES
- *A.* Not adequate—maladjusted—failure—conflict:
  1. Discouragement and despair.
  2. Hate, revenge, crime, rebellion, violence, suicide.
  3. Anxiety, fear, insecurity, unhappiness, sorrow, failure.
  4. Hardship, deprivation, sacrifice, self-punishment, striving.

B. Adequate—adjusted—success—harmony:

1. Hope, courage, confidence, faith, interest, curiosity.
2. Love, conciliation, peace, trust, protection.
3. Emotional and physical satisfaction—joy, success, contentment, security, fearlessness, happiness.
4. Ease, attainment, reward comfort, encouragement.

V. ENDING

A. Not satisfactory to society nor the individual.

B. Satisfactory to society and the individual.

Name .....Age.... Date..... Sex..... Occupation..... Or School.....Grade.....

Picture	Needs *A B C D E*	Effect of Environment *II A*	*II B*	Reaction to Environment *III A*	*III B*	Adequacy *IV A*	*IV B*	Ending *V A*	*V B*
1.	A B C D E	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	A	B
2.	A B C D E	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	A	B
3-M. 3-F.	A B C D E	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	A	B
4.	A B C D E	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	A	B
5.	A B C D E	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	A	B
6-M. 6-F.	A B C D E	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	A	B
7.	A B C D E	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	A	B
8-M. 8-F.	A B C D E	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	A	B
9-M. 9-F.	A B C D E	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	A	B
10.	A B C D E	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	A	B
NUMBER									
TOTAL									

Appendix C: Picture 1, Group Projection Test, and Key For Correlating the Group Projection Test

A. Group Projection Test

1. The boy heard a great artist play the violin, the experience inspired him to become a musician.

(*a*) He studies the violin and is acclaimed a genius. In spite of the fame he gains he is very unhappy and shy.

(*b*) His parents provide him with a violin and lessons. He studies

FIGURE 1
Picture 1

very hard but never attains any success musically. This experience makes him very resentful.

(*c*) The boy loves his violin and gets great satisfaction from his music. He studies hard and becomes famous.

2. The boy has been told to practice, but he wants to go out and play with the other boys.

(*a*) He likes his violin but is afraid the boys will make fun of him and call him a sissy so he gives up his music entirely.

(*b*) He doesn't want to take violin lessons but his parents insist

upon it. Later he is glad because he likes music and plays the violin for his own relaxation and enjoyment.

(*c*) He is angry and resentful because he has to practice. He thinks music is foolish and never achieves any success in it.

3. The boy's dead father gave him the violin. He is very fond of it and wants to be a great musician and achieve fame as his father did.

(*a*) His mother works hard to provide money so he can study the violin. He practices long hours and brings satisfaction and joy to his mother and himself.

(*b*) He practices hard but never receives recognition and fame as his father did. Because of this he is very despondent and unhappy.

(*c*) He never lost the determination to follow in his father's footsteps. He studied hard and sacrificed much for his music but was amply repaid for the effort as he achieved great fame.

B. Key For Evaluating Picture 1

1.

(*a*) I,A,D — II,B,1 — III,B,3 — IV,A,3 — V,A
(*b*) I,A,D — II,B,2 — III,A,1 — IV,A,4 — V,A
(*c*) I,A,D — II,B,4 — III,B,3 — IV,B,4 — V,B

2.

(*a*) I,C — II,A,2 — III,A,4 — IV,A,3 — V,A
(*b*) I,C — II,A,2 — III,A,2 — IV,B,3 — V,B
(*c*) I,C — II,A,1 — III,A,1 — IV,A,3 — V,A

3.

(*a*) I,A,B,D — II,B,3 — III,B,2 — IV,B,3 — V,B
(*b*) I,A,B,D — II,A,1 — III,A,4 — IV,A,3 — V,A
(*c*) I,A,B,D — II,B,1 — III,B,3 — IV,A,4 — V,B

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